

## Office of Technology Transfer

Naval Aerospace Medical Research Laboratory  
Naval Submarine Medical Research Laboratory

First Developed  
To Support the  
Operational Forces  
of the Navy and  
Marine Corps

Now Available to  
Support the Nation

### ACOUSTIC ATTENUATION AND VIBRATION DAMPING MATERIALS

"Partnerships Produce New Materials"

The Office of Naval Research manages the Department of the Navy's Technology Transfer Program. This program promotes collaborative partnerships and development of naval technology through patent licenses for enhanced naval mission capabilities and economic development. Traditional sound-absorbing materials that are effective at the lower (i.e., <100 Hz) frequencies typically depend on the inertia present in the mass of those materials. Oftentimes, this weight penalty is unacceptable in a target application. Such is usually the case in the aviation and marine transportation environments.

In 1995, the Naval Aerospace Medical Research Laboratory in Pensacola, Florida was awarded a patent for a new technology that utilizes the fact that acoustical energy is inefficiently transferred between media differing in characteristic acoustical impedances. This allowed researchers to apply the technology to such materials as epoxy resins, silicon gels, polyurethane foams, plastics and silicon- and carbon-based rubbers with usually only a minor change in weight characteristics of the base material. Additionally, unlike laminates which have a lateral directionality component, the Navy's propriety technology employs a composite fabrication approach which is non-directional and permits the manufacture of components via casting, spraying, extrusion and molding.



Sound transmission loss testing

Licensed partners:

Elastocall Services, Pensacola, Florida

Specialty Elastomer Technologies Inc., Mold-Ex Division, Milton, FL

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